Work Study and its Benefits to Management and Labour

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WORK Study is a subject so vast in itself that it becomes difficult in a short article to indicate its true worth to Management and also its value to labour. It is really a research or analytical study of work itself and of all the conditions and aspects relating to work. The object of this analytical study is to reduce the unit cost of production or output by improving methods, materials, tools, and equipment; the unit cost is also reduced by improving productivity or the level of performance through the better use of the time element. In the process of this achievement the quality factor is maintained if not bettered.

Work Study in itself can only do what it is made to do. It is nothing else but a tool of management and, as a skilled painter can shape a masterpiece with his brush—his working tool—so can a progressive management shape itself into an efficient body by the proper use of work study. In doing this it will obtain optimum working conditions and results throughout its organisation. By investigating one set of problems, the weaknesses of all other functions affecting it will gradually be laid bare.

Now research or any other type of study must have definite terms of expression for measuring the results of its findings and also for general comparison purposes. These terms of expression or recognised bases of measurement must be acceptable under all conditions. To illustrate what I mean by a recognised base or unit of measurement let me please say this :—You would probably find it amusing if each member of a group of athletic officials insisted on his own 100 paces as being the correct distance for a 100 yard run or sprint. We would not be able to appreciate record runs because of the unreliable method of measuring distance. The confusion and uncertainty is avoided by the use of a standard yard measurement in which all have confidence. These varying paces for 100 yards could however be reconciled to the standard 100 yards if the corrective multiplying ratios of each member were known—we could in effect call this corrective ratio a rating factor. Progress in running the 100 yards therefore becomes measureable and results this year can be compared truthfully with those of years past—subject of course to conditions being the same.

Can I take this analogy a step further :—We all accept the standard yard as the true standard yard for linear measurement. This yard has

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its elements of feet and inches and even fractions thereof. The varied summations of these elements comprising a yard will always equal yard unity. It does not really matter how we express the distance; it could be in feet or in inches. The terms of expression depends upon the range of measurement. You would not, for instance, dream of measuring the height of pruning in a forest in terms of inches. Yet for a Japanese miniature tree of the same variety you would find the inch quite convenient if pruning were prescribed. In the same way different operations in forestry have their own convenient terms of expression for measuring quantity of work. For example, drainage would be in yards, planting would be in numbers and so on. Yards of drain and numbers of plant etc. are therefore terms of work content in a sense, but a collection of such heterogeneous terms is not of much use in measuring the total capacity or volume of work in a forest—and provides no safe basis for comparison of productivity of different labour, tools or methods.

We must therefore find a common single unit. The most appropriate unit for forestry is the man-hour. The man-hour however is somewhat similar in character to the athletic official's measuring of a 100 yard run by pacing. We must adopt a more stable unit of measurement and this is the standard man-hour.

As the pacing of 100 yards can be resolved to a standard 100 yards, so also can the man-hour be resolved to a standard man-hour if a similar rating factor is employed and the result combined with a rest allowance. I will expand on this later on.

The standard man-hour is a definite unit of measurement and is to work measurement, and indeed to other aspects of Work Study, as the kilowatt-hour is to electricity or the therm is to gas. The standard man-hour is common throughout all forests working under the Incentive Bonus Scheme.

Now I think I should give you a definition of a standard hour :— "The hours allowed for any given task are not hours of continuous work. *Each hour contains within it an element of rest.* The proportion of rest to work varies according to the nature of strain imposed by the work." Adding work to rest must always give a total of one hour, or one minute if the standard minute is employed. The advantage of this unit of measurement or standard hour is that it can be used to measure and compare dissimilar types of work, the accuracy of the comparison being limited by the consistency of the time standards.

There are two major aspects of Work Study, viz., Method Study and Work Measurement. "Method Study is the systematic recording, analysis and critical examination of existing and proposed ways of doing work and the development and application of easier and more effective methods." I would prefer not to deal here with this aspect of Method Study, but mention of it is necessary so as to give the full meaning of Work Study.

Work Measurement which we are dealing with here is that phase

of Work Study which deals with the time element and the amount of work done. "Work Measurement is the application of techniques designed to establish the work content of a specified task by determining the time required for carrying it out at a defined standard of performance by a qualified worker." The work content is measured in terms of standard man-hours.

It will be seen that a performance ratio is obtained if the standard hours allowed for a task is divided by the actual clock hours taken to complete the task. A standard performance is when this ratio is unity, and this has been set at 100 per cent. A variance from this level by a forest gives management its efficiency index and one which is reliable in all respects. On this efficiency index is based a system of bonus payments over and above a guaranteed basic wage for the implementation of incentive working conditions. Earnings of labour are therefore related to effort once a basic level of performance has been reached; the guarantee of basic wages is a safeguard to labour.

What are the advantages of work measurement? They are numerous but in general terms work measurement provides the basic information necessary for all the activities of organising and controlling the work of any undertaking in which the time element plays a part. It gives to labour more money for more work done, it gives to management a higher productivity with a consequent lowering of unit cost. Other advantages are :—

(a) In comparing the efficiency of alternative methods.
(b) In allocating work to a group of workers for balanced working.
(c) In providing information for planning and scheduling of production including plant and labour requirements.
(d) In providing information on which estimates for tenders, selling prices and delivery promises can be made, or rather based.
(e) In providing information for labour cost control and enabling standard costs to be fixed and maintained.

The basic procedure in work study generally is :—

(1) Select the work to be studied.
(2) Record all relevant data.
(3) Measure each element in time.
(4) Examine relevant data and element times.
(5) Compile a standard time for the task.
(6) Define precisely what item (5) refers to.

The value of work study lies in the fact that by carrying out its systematic procedures a quite ordinary man can achieve results as good as or better than the less systematic genius were able to achieve in the past. It is a means of raising productivity but looking after labours at the same time, it is systematic, and it is the most accurate means yet evolved of setting standard of performances on which the effective

planning and control of productivity depends. The benefits resulting from Work Study start at once and continue as long as the operation continues in the improved form. It is tool which can be applied everywhere. It can be used with success wherever manual work is done or plant operated not only in manufacturing shops but in offices, stores, laboratories and service industries. Its adaptability is such that it can be applied with success even to field operations of a varied nature such as one finds in forestry and proves itself all the more useful in reducing a mass of varying operating conditions to a co-ordinated pattern.
